

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

REMARKS

Status of the Claims

Upon entry of the amendment above, claims 1-16 and 18-67 will be pending, claims 1, 15, 46, 50, and 64 being independent.

Summary of the Office Action

Claims 1, 3, 5-14, 29, 31, 32, 36, 42, and 44 are rejected under 35 USC §103(a) as being unpatentable over EP 0 575 130 in view of ELLIS (U.S. Patent No. 3,514,798) and MASTERS (U.S. Patent No. 4,681,080). See Section 2, beginning on page 2 of the Office action.

Claims 2 and 4 are rejected under 35 USC §103(a) as being unpatentable over EP '130 in view of ELLIS, MASTERS, and further in view of WOJCIK (U.S. Patent No. 5,807,152). See Section 3, on page 6 of the Office action.

Claims 15, 16, 18-28, 30, 33, 34, 35, 37-41, 43, and 45-52 are rejected under 35 USC §103(a) as being unpatentable over ITNYRE et al. (U.S. Patent No. 6,800,006) in view of ELLIS and MASTERS. See Section 4, beginning on page 6 of the Office action.

Response to the Office Action

A. Statement of the Substance of Interview

Pursuant to the requirement made in the Interview Summary (form PTO-413), dated March 6, 2006, regarding a personal interview between the Examiner and Applicants' undersigned representative, Applicants here provide a statement of the substance of the interview.

Applicants' representative raised the issue of the relevance of MASTERS in the obviousness rejections. All three grounds of such rejections rely upon MASTERS (which is directed to a kayak) as suggesting a modification of a surfboard (i.e., EP '130 as modified by ELLIS, or ITNYRE).

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

In this regard, Applicants' representative pointed out that EP '130 and ELLIS disclose rigid surfboards, which utilize honeycomb structures for such rigidity. Both rely upon honeycomb structures for internal stringers/partitions, as pointed out by EP '130 in the paragraph beginning at column 4, line 57, and by ELLIS in the paragraph beginning at column 2, line 28. In fact, it was pointed out that ELLIS discloses the addition of "hardened granular foam material" (column 2, lines 19-21) "for increasing the strength in any weaker parts of the surf-board." Therefore, in addition to MASTERS' relevance being questioned for other reasons, Applicants' representative pointed out that one skilled in the art would not have been motivated to use a "flexible foam material B'" of MASTERS, since that would be inconsistent with the objective of EP '130 and ELLIS.

The Examiner responded by explaining that he saw no problem in the rejection in which hardened granular foam material of ELLIS is added to the honeycomb cells of EP '130 to strengthen the board (and to create a "sheet of foam") and in which the stringer 20 of EP '130 is modified by MASTERS to make it more flexible.

Applicants' representative took issue with a honeycomb structure filled with foam (regarding, e.g., the limitation of claim 1 calling for the upper half-shell comprising a "sheet of foam") being properly characterized as a "sheet of foam" and also pointed out (regarding limitations regarding the partition) that flexible foam material B' of MASTERS is not a partition. In fact, material B' is only a dampener that is affixed to opposite sides of the rigid thin web A. Therefore, one skilled in the art would not be taught to provide a flexible stringer for EP '130. Further, because EP '130 does not employ a thin rigid stringer (but a rigid honeycomb structure), one skilled in the art would not find MASTERS' dampening material necessary or useful at all.

Applicants' representative also pointed out that the combinations of EP '130+ELLIS+MASTERS and ITNYRE+MASTERS do not render obvious Applicants'

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

claims which call for a partition "consisting essentially of foam." The Examiner pointed out that his position is that foam material B' of MASTERS is a partition and, even as part of a partition/stringer, it consists essentially of foam. Also, the Examiner mentioned that Applicants' claims do not require that all partitions are made essentially of foam.

Lastly, Applicants' representative pointed out that the references relied upon in the rejections do not fairly address the limitations in Applicants' claims 3 and 9-13 and others, which specify, with successively greater detail, the material of which their partition is made. The Examiner pointed out that he cannot allow a claim because of a particular material that is used. Applicants' representative pointed out that the specification describes with certain detail the advantages of using an elastic foam or, more specifically, a polypropylene foam, as a partition in a surfboard and that certain objects of the invention are achieved by using such foam.

B. Summary of the Amendment

In the amendment presented above, Applicants have made a clarifying amendments to dependent claims 5, 32, 33, 35, 40, and 41; they have amended independent claims 15 and 46; and they have added new claims 53-67, of which claim 64 is independent.

New claims 53-63 are believed to be allowable at least for reasons for which claims from which they depend should be found allowable, including reasons of record and reasons advanced below.

New claims 64-67 are allowable at least for reasons that claim 23 of parent U.S. Patent No. 6,736,689 was allowed. In this regard, claim 64 includes the subject matter of claim 23 of US '689, as well as additional subject matter in the final three lines thereof, viz., "at least one longitudinally extending partition within said hollow inner shell, said partition being made of a material different from said thermoformed extruded polystyrene foam of said casing."

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

C. Withdrawal of §103 Rejections Based Upon EP '130, ELLIS and MASTERS

Applicants kindly request that the rejections based upon the combined teachings of EP '130, ELLIS, and MASTERS, which includes the rejection of independent claim and claims depending therefrom (including the rejection of claims 2 and 4 which additionally rely upon WOJCIK), be reconsidered and withdrawn for reasons of record as well as further reasons presented below.

1. Neither EP '130 nor ELLIS nor MASTERS Disclose an Upper Half-Shell Comprising a Sheet of Foam

In independent claim 1, Applicants call for their upper half-shell to comprise "a sheet of foam having downwardly curved side-walls."

By contrast, according to the rejection (see page 3, lines 1-5 of the Office action), the cells of EP '130 are filled with "a large number of hardened granular foam material 22 ... for increasing the strength in any weaker parts of the surf-board" (column 2, lines 16-21) of ELLIS. The rejection concludes that "As such the upper and lower shell would comprise "a sheet of foam."

Applicants respectfully disagree. Rather than a sheet of foam, the combination would result in a honeycomb structure that includes loose foam granules. Both EP '130 and ELLIS rely upon a honeycomb structure to form their "sheets." In ELLIS, foam granules are relied upon only in a supplemental capacity, which, Applicants submit, does not turn a honeycomb sheet into a foam sheet.

Further, Applicants' new claim 53 (which depends from claim 1) specifies that "said upper half-shell is not reinforced with a honeycomb structure." Claim 53 should therefore be found allowable over the combination relied upon to reject claim 1 even if the rejection were to be conceded as proper.

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

Still further, new claim 60 (which also depends from claim 1) specifies that "said sheet of foam comprises foam continuous along a length and a width of said sheet," which is not taught or suggested by any of the references relied upon in rejecting claim 1.

2. No Reason, Other Than Provided by Applicants, to Use Part of MASTERS' Kayak Partition in the Surfboards of EP '130 and ELLIS

In independent claim 1, Applicants call for their surfboard to include a longitudinal partition consisting essentially of foam. By contrast, EP '130 and ELLIS disclose a single longitudinal wall which is made rigid, such as by means of a honeycomb structure. See, e.g., column 5, lines 18-27 of EP '130 (regarding wall 20) and column 2, lines 28-38 of ELLIS (regarding reinforcing panel 27).

Neither EP '130 nor ELLIS teach or suggest the desirability of a surfboard having a deck that can deflect because of a less than rigid internal partition. Of course, Applicants note that their claim 1 does not specify an elastic partition; however, the rejection of Applicants' claim 1 is based upon a combination that, according to the logic of the rejection, would result in an elastic partition.

Therefore, to change the nature of the surfboards of EP '130 and ELLIS, or the combination of the two, into something for which there is no reason and no advantage to create, Applicants' submit, can only be based upon an improper hindsight reconstruction of Applicants' invention.

MASTERS is directed to a kayak, whereby having a Fig. 3B embodiment for cushioning the boat against boulders and the like that might be "encountered during whitewater conditions." With a surfboard (disclosed by EP '130 and ELLIS), Applicants submit, concerns about conditions that would be encountered during whitewater canoeing/kayaking would not be considered by one skilled in the art of surfboards.

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

3. No Reason to Take Apart MASTERS' "Moment-Resisting Web Means"

Element B' of MASTERS is not a partition. The ordinary meaning of the term "partition," particularly in the context of Applicants' disclosure, is "something that separates or divides." See, e.g., *Random House Webster's Unabridged Dictionary*, Second Edition, Random House, Inc., New York, NY, 2001, page 1415. In Applicants' invention, their partition(s) separate(s) or divides their hollow board into two or more internal cavities.

In the final three lines of page 11 of the Office action, the Examiner explains, with regard to the Office action to which Applicants are here responding, vis-à-vis the prior Office action, "First, the grounds of rejection have been modified in that the longitudinal partition consisting essentially of foam is considered to be B' alone of figure 3B of Masters."

That is, the rejection now relies upon MASTERS in modifying the combination of EP '130 and ELLIS by appropriating **only** the foam blocks B' from MASTERS. In this regard, on page 3 of the Office action, lines 8-10, the Examiner proposes that it would have been obvious to "replace the partition 20 of EP 130 with a partition similar to B' of figure 3B of Masters which consist essentially of foam." That is, while relying upon MASTERS, the rejection contemplates disassembling the web A'/B' combination while maintaining that it would have been obvious to have used only the foam B' from MASTERS. Of course, the foam B' of MASTERS is merely a dampener of sorts for resisting bending moments of the thin web A (see column 3, lines 5-10 of MASTERS). Applicants respectfully submit that one skilled in the art, reading MASTERS, would conclude that the "partition" A'/B' is a composite/unitary structure which joins the deck and hull of MASTERS' kayak.

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

Element B' of MASTERS is *only a part* of a partition. The abstract of MASTERS explains that the invention is directed to the frame structure of a kayak having "a thin moment resisting web (A) having dimensional rigidity in a vertical direction ... surrounded by foam blocks (B) to provide dimensional rigidity in a lateral direction." The broadest claim of MASTERS is directed to the same thing.

Fig. 3B of MASTERS illustrates an embodiment in which a small amount of foam is located between the web and the hull. But the main purpose of that foam cushion is to resist abrading of the flexible skin of the hull. Such abrasion might occur due to the fact that, in the other embodiments, the hull would be directly in contact with the rigid web. Therefore, the foam cushion is here only as an accessory to the presence of the rigid web, to minimize one of the negative effects of the web, which remains an essential feature of that which is taught and suggested by MASTERS. Moreover, the abrasion may occur "when the kayak impacts boulders," a problem totally absent during surfing, as mentioned above.

If element B' of MASTERS were to be utilized in combination with a primary reference, Applicants submit, it would be for resisting the tendency of a thin web member from buckling, as explained by MASTERS in column 3, lines 5-10. Since both EP '130 and ELLIS utilize rigid longitudinal walls within their surfboards, Applicants submit that one skilled in the art of surfboards would look to MASTERS for resisting buckling.

Other than for preventing buckling in the case of a thin web, there would be no reason to disassemble MASTERS' composite partition AB, or A'B' in the manner upon which the rejection relies.

Further to the foregoing, Applicants' claim 32 (as amended above) calls for "said foam of said longitudinal partition is continuous along the width of said partition through an entirety of said height of said longitudinal partition."

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

In addition, Applicants' new claim 55 (which depends from claim 1) specifies that "said partition consists essentially of foam along an entirety of said height and thickness with no internal reinforcing structure within said thickness.

New claim 56 (which depends from claim 1) calls for a plurality of longitudinal partitions made of foam, each of which has opposite sides exposed to an inner cavity of the surfboard. Again, none of EP '130, ELLIS, and MASTERS (nor the rejection that additionally rely upon WOJCIK) teach or suggest the subject matter of claims 32, 55, and 56.

New claims 57-59 (which depend directly or indirectly from claim 1) also include subject matter not taught or suggested by EP '130, ELLIS, or MASTERS (or WOJCIK). For example, claim 57 calls for the most rigid partition of the surfboard to be the partition that consists essentially of foam.

4. No Motivation to Modify References in Combination to Meet Terms of Applicants' Claims 9-13

From line 2 of page 4, to page 5, line 3, the Office action addresses the limitations that appear in Applicants' claims 9-13. Claim 9 provides that the at least one partition is made of polypropylene foam. Claims 10-13, which depend directly or indirectly from claim 9, specify certain physical characteristics of the polypropylene foam that provides for the advantages discussed in Applicants' specification, which permit the invention to achieve certain objects of the invention.

None of the references relied upon teach or suggest the limitations presented in claims 9-13. Nevertheless, with a broad brush, the Examiner concludes that it would have been obvious to have modified the surfboard of EP '130, ELLIS, and MASTERS to include the features of Applicants' claims 9-13 so that a particle foam would be used that provides strength which is also durable, light, and flexible.

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

No source is given as to where the characteristics of “durable, light, and flexible” are found. Applicants respectfully submit that the Examiner has not provided a prima facie case of obviousness in rejecting claims 9-13.

Neither EP '130 nor ELLIS teach or suggest a *flexible* partition and MASTERS fails to teach or suggest a flexible partition. MASTERS' partition AB and A'B' is rigid as well, although a transverse dampener B, B' is provided because the web A, A' is thin transversely.

By contrast, beginning with paragraph 0063 of the specification of the instant application, Applicants have disclosed the benefits of using an elastic partition (which includes a visco-elastic partition), such as a foam, with paragraph 0068 explaining the characteristics of an expanded polypropylene foam (EPP foam), which heretofore has not been used in a surfboard, to provide the benefit of providing sufficient support for the deck of the surfboard, while providing deflection to add liveliness to the board.

Attached hereto is a copy of an article from the January 31, 2006 edition of the *Honolulu Star-Bulletin*, entitled “Changing surfboard market energizes Kapolei firm,” which explains that one California supplier (Clark Foam) had supplied 80% of the world's market for surfboard foam blanks until it shut down in December 2005. Those blanks were made of polyurethane (PU). Of course, such blanks are solid foam blanks, rather than hollow blanks with internal partitions. The article quotes one surfboard shaper as stating that “95 percent of surfers are still using polyurethane” blanks. The article further explains that a small company (Pacific Allied Products) has begun to offer surfboard blanks made of expanded polystyrene (EPS) foam.

The use of PU for surfboard blanks is consistent with Applicants' description of the prior art (see, e.g., paragraph 0018 of the specification of the instant application). See also

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

the attached article from *surfermag.com*, entitled "Clark Foam Apocalypse: Some Board Builders See Light Ahead While Clamoring to Fill Clark Foam Void," which also describes the use of PU and polystyrene foam blanks.

Further, Applicants explain that their deck and hull (i.e., upper and lower half-shell) can be made of various types of foam, including PU and PVC foams. See, e.g., paragraph 0026 of their specification.

However, the references relied upon in the rejection do not teach or suggest the use of an elastic foam in a surfboard, more particularly a partition made to include an expanded polypropylene foam (EPP), which enable Applicants to achieve certain objects of the invention, and as specified in their claims 9-13. It is Applicants' contribution to the technology to disclose a hollow surfboard having a partition made of a foam different from the foam of the deck or hull, more particularly an elastic foam and, more particularly, one in which the elastic foam is EPP foam.

At least for the reasons given above, reconsideration and withdrawal of the rejections of claims 1-14, 29, 31, 32, 36, 42, and 44 is kindly requested.

D. Withdrawal of §103 Rejection Based Upon ITNYRE, ELLIS and MASTERS

In addition to the rejection of claims 1 and its dependents, Applicants request that the rejection of independent claims 15, 46, 50, and their dependents, based upon the combination of ITNYRE, ELLIS, and MASTERS, be withdrawn at least for reasons of record.

Independent claim 15 is directed to an aquatic board in which Applicants call for at least one partition to comprise "a polymeric foam material having a compressible elasticity or viscoelasticity to provide said deck with an ability to deflect downwardly under pressure exerted by a foot of a user on said deck relative to said hull and to cause said deck to recover from said deflection upon cessation of said pressure exerted by the foot."

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

According to Applicants' invention specified in claim 15, e.g., the use of elastic foams enable a surfer, while riding his/her surfboard, to benefit from a downward deflection of the top of the board, viz., the upper half-shell or deck, relative to the lower half-shell or hull, thereby giving the board an increased liveliness, as mentioned in paragraphs 0015 and 0063-0065 of Applicants' specification.

1. Layers 65 and 66 of ITNYRE Are Not Elastic Foam Partitions

For the purpose of overcoming the interpretation of ITNYRE presented in italics at the top of page 8 of the Office action (with which Applicants respectfully disagree), Applicants have presented a clarifying amendment to independent claims 15 and 46, whereby the foam of the partition extends "between at least a majority of a distance between said deck and said hull." The thin "vibration dampening layers 65 and 66" mentioned in column 4, lines 46-48 of ITNYRE cannot be so characterized. Also, the material from which such layers are made is not disclosed. Therefore, neither claim 15 nor claim 46 are susceptible to such an interpretation of ITNYRE. Independent claim 50, which calls for the polymeric foam of the partition to extend "along substantially the height of said inner cavity from said deck to said hull," is also not believed to be susceptible to such an interpretation.

2. No Reason to Take Apart MASTERS' "Moment-Resisting Web Means"

As mentioned above in connection with the rejection that relies upon the alleged suggestion of modifying a surfboard of EP '130 and ELLIS by means of MASTERS, Applicants kindly request reconsideration and withdrawal of the rejection based upon the combination of ITNYRE, ELLIS, and MASTERS for similar reasons.

As mentioned above, element B' of MASTERS is not a partition, but merely a part of a partition, despite the statement in the Office action that "the grounds of rejection have

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

been modified in that the longitudinal partition consisting essentially of foam is considered to be B' alone of figure 3B of Masters."

As also explained above, the foam B' of MASTERS is merely a dampener for resisting bending moments of the thin web A, as described in column 3, lines 5-10 of MASTERS. Applicants respectfully submit that one skilled in the art, reading MASTERS, would conclude that the "partition" A'/B' is a composite/unitary structure which joins the deck and hull of MASTERS' kayak. Therefore, if one skilled in the art were to consider the teachings of MASTERS, foam B' would be considered as providing a dampener against the tendency of a thin web to buckle. If MASTERS were to be considered for its use as a cushion, a small thickness would be considered at most (although Applicants submit that relying upon MASTERS' teaching to modify a surfboard would not have been considered by one skilled in the art inasmuch as such cushioning for whitewater kayaking is not applicable for surfboards), such thickness not extending between at least the majority of the height between the deck and the hull of such surfboard, as specified in independent claims 15, 46, and 50.

Further, even if one were to concede the appropriateness of the ITNYRE, ELLIS, MASTERS combination, the terms of Applicants' claim 33 would not result. That is, on page 10, lines 12-14, it is mentioned that "[t]he partition of Masters is continuous along its height and along its **bottom** width" (emphasis added). Claim 33, as amended, specifies that the foam of the partition is continuous along the width through the entirety of the height of the partition.

3. Use of Polypropylene Foam Not Obvious

In claims 18, 19, 21, 22, 24, 25, 27, 28, 40, and 41 Applicants specify a polypropylene foam and, in particular, an expanded polypropylene foam for the partition.

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

As explained above in connection with the rejection of Applicants' claims 9-13, beginning with paragraph 0063 of their specification, Applicants have disclosed the benefits of using an elastic partition, with paragraph 0068 explaining the characteristics of an expanded polypropylene foam (EPP foam), which heretofore has not been used in a surfboard, to provide the benefit of providing sufficient support for the deck of the surfboard, while providing deflection to add liveliness to the board.

Further, Applicants' claim 21 calls for the partition to be made of polypropylene foam, whereas parent claim 20 calls for the deck to be made of a polystyrene foam. Thereby, the surfboard of claim 21 includes a relatively elastic polypropylene foam partition in a hollow surfboard made of a conventional polystyrene foam, i.e., conventional in the sense that polystyrene foam is known to be used in solid foam blanks of surfboards, for example. None of the references relied upon teach or suggest using one foam for the deck of a surfboard and another foam, particularly an elastic foam, for an internal partition.

Similarly, Applicants' claim 38 calls for the foam of the deck to be a polyurethane foam, i.e., a material known to be used for conventional solid foam blanks, or a polyetherimide foam, whereas the material of the partition in claim 40, which depends from claim 38, is specified to be a polypropylene foam. No such combination of surfboard deck and internal partition is taught or suggested.

5. ITNYRE Does Not Disclose a Surfboard Deck Comprising a Sheet of Foam

In new claims 61, 62, and 63, which depend from independent claims 15, 46, and 50, respectively, Applicants call for the deck of their surfboard to comprise "a sheet of foam continuous along a length and width of said sheet." Claim 54 calls for the deck of claim 15 not to be reinforced with a honeycomb structure.

By contrast, like the surfboards of EP '130 and ELLIS, ITNYRE utilizes a honeycomb structure. Even if the honeycomb structures were to be filled with loose foam granules (as allegedly suggested by ELLIS), a continuous foam sheet would not result.

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

ITNYRE, like EP '130 and ELLIS, provide evidence that if a hollow surfboard is to be made, its deck must be made rigid with a honeycomb structure. By contrast, Applicants utilize sheets of foam with internal partitions supporting same.

6. New Claims 64-67 Are Allowable in View of Allowance of Patent Claim in US '689

As mentioned above, new claims 64-67 should be found allowable at least for reasons that claim 23 of parent U.S. Patent No. 6,736,689 was allowed. In this regard, claim 64 includes the subject matter of claim 23 of US '689, as well as additional subject matter in the final three lines thereof, viz., "at least one longitudinally extending partition within said hollow inner shell, said partition being made of a material different from said thermoformed extruded polystyrene foam of said casing."

Claim 66 specifies that the partition is made of wood, while claim 67 specifies that the partition is made of foam, which claims are supported by Applicants' original disclosure. See, e.g., paragraph 0039.

SUMMARY AND CONCLUSION

The grounds of rejection advanced in the Office action have been addressed and are believed to be overcome. Reconsideration and allowance are respectfully requested in view of the amendment and remarks above.


A check is enclosed for payment of a claim fee. No additional fee is believed to be due at this time. However, the Commissioner is authorized to charge any fee required for acceptance of this reply as timely and complete to Deposit Account No. 19-0089.

Further, although no extension of time for one month is believed to be necessary at this time, if it were to be found that an extension of time were necessary to render this reply timely and/or complete, Applicants request an extension of time under 37 CFR §1.136(a) in the necessary increment(s) of month(s) to render this reply timely and/or complete and the

U.S. Patent Application No. 10/810,572
P24493.A07 (S 856/US/PCT/Cont)

Commissioner is authorized to charge any necessary extension of time fee under 37 CFR
§1.17 to Deposit Account No. 19-0089.

Respectfully submitted,
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Attachments:

- Article from the January 31, 2006 edition of the *Honolulu Star-Bulletin*, entitled "Changing surfboard market energizes Kapolei firm" (3 pages);
- Article from *surfermag.com*, entitled "Clark Foam Apocalypse: Some Board Builders See Light Ahead While Clamoring to Fill Clark Foam Void" (3 pages)

Certificate of Transmission Under 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office (fax number 571-273-8300) on March 20, 2006.


Signature (James L. Rowland, Reg. No. 32,674)


Date of signature